shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention.

1. (canceled)

2. A manifold interface for coupling a manifold of a disposable fluid handling unit for use in a fluid pumping system to a base control unit of the fluid pumping system, the manifold interface comprising:

a housing comprising a coupling side that includes a sensor probe extending away from the housing and configured and arranged to mate with a corresponding sensor well on a coupling side of the manifold of the disposable fluid handling unit;

the sensor probe configured and arranged to detect temperature or electrical conductivity of a liquid in a manifold channel into which the sensor well extends;

the housing comprising a data key interface configured and arranged to interface with a corresponding data key on the manifold of the disposable fluid handling unit;

wherein the data key interface is configured and arranged to provide a communication interface through which a controller of the base control unit can read information from the data key on the manifold of the disposable unit.

3. The manifold interface of claim **2**, wherein the information from the disposable fluid handling unit read by the controller of the base control unit via the data key interface comprises one or more of a serial number, a model number, an expiration date, or prior usage information.

4. The manifold interface of claim **2**, wherein the data key interface is configured and arranged to provide a bi-directional communication interface.

5. The manifold interface of claim **4**, wherein the data key interface is configured and arranged to transmit usage information from the controller to the disposable unit.

6. The manifold interface of claim **2**, wherein the housing includes a second probe extending out from the housing and configured to mate with a corresponding second sensor well on the coupling side of the manifold of the disposable fluid handling unit.

7. The manifold interface of claim **6**, wherein the second sensor well extends into a second manifold liquid-carrying channel.

8. A manifold interface for coupling a manifold of a disposable fluid handling unit for use in a fluid pumping system to a base control unit of the fluid pumping system, the manifold interface comprising:

a housing comprising a coupling side that includes a pneumatic actuation port configured and arranged to connect to a corresponding pneumatic actuation port of the manifold of the disposable fluid handling unit, wherein the pneumatic actuation port is in fluidic communication with a pneumatically actuated diaphragm pump of the disposable fluid handling unit;

the housing comprising a data key interface configured and arranged to interface with a corresponding data key on the manifold of the disposable fluid handling unit;

wherein the data key interface is configured and arranged to provide a communication interface through which a controller of the base control unit can read information from the data key on the manifold of the disposable unit.

9. The manifold interface of claim **8**, wherein the information from the disposable fluid handling unit read by the controller of the base control unit via the data key interface comprises one or more of a serial number, a model number, an expiration date, or prior usage information.

10. The manifold interface of claim **8**, wherein the data key interface is configured and arranged to provide bi-directional communications between the controller and the data key.

11. The manifold interface of claim **10**, wherein the data key interface is configured and arranged to transmit usage information from the controller to the disposable unit.

12. The manifold interface of claim **8**, wherein the housing includes a second pneumatic actuation port configured to connect to a corresponding pneumatic actuation port of a second pneumatically actuated diaphragm pump of the disposable unit.

13. A manifold interface for coupling a manifold of a disposable fluid handling unit for use in a fluid pumping system to a base control unit of the fluid pumping system, the manifold interface comprising:

a housing comprising a coupling side that includes a sensor probe extending away from the housing and configured to mate with a corresponding sensor well on a coupling side of the manifold of the disposable fluid handling unit;

the sensor probe configured arranged to detect temperature or electrical conductivity of a liquid in a manifold channel into which the sensor well extends;

the coupling side of the housing comprising including a pneumatic actuation port configured and arranged to connect to a corresponding pneumatic actuation port of the manifold of the disposable fluid handling unit, wherein the pneumatic actuation port is in fluidic communication with a pneumatically actuated diaphragm pump of the disposable unit;

the housing comprising a data key interface configured and arranged to interface with a corresponding data key on the manifold of the disposable fluid handling unit;

wherein the data key interface is configured and arranged to provide a communication interface through which a controller of the base control unit can read information from the data key on the manifold of the disposable unit.

14. The manifold interface of claim **13**, wherein the information from the disposable fluid handling unit read by the controller of the base control unit via the data key interface comprises one or more of a serial number, a model number, an expiration date, or prior usage information.

15. The manifold interface of claim **13**, wherein the data key interface is configured and arranged to provide bi-directional communications between the controller and the data key.

16. The manifold interface of claim **15**, wherein the data key interface is configured and arranged to transmit usage information from the controller to the disposable unit.

17. The manifold interface of claim **13**, wherein the housing includes a second probe extending out from the housing and configured to mate with a corresponding second sensor well on the coupling side of the manifold of the disposable fluid handling unit.

18. The manifold interface of claim **17**, wherein the second sensor well extends into a second manifold liquid-carrying channel.

19. The manifold interface of claim **13**, wherein the housing includes a second pneumatic actuation port config-